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09/992,408	11/26/2001	Michael Kevin Geraghty	9742.011.00	5515
30827	7590	01/30/2006	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			DESHPANDE, KALYAN K	
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WASHINGTON, DC 20006			3623	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/992,408

Applicant(s)

GERAGHTY, MICHAEL KEVIN

Examiner

Kalyan K. Deshpande

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**  
***Introduction***

1. The following is a non-final office action in response to the communications received on November 26, 2001. Claims 1-19 are now pending in this application.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. (2002/0123930).

As per claim 1, Boyd teaches:

A method of dynamically determining a pricing rate for an insurance product, comprising:

(a) grouping demand for any of a plurality of products together into any of a plurality of market segments based on at least one of a plurality of pricing variables (see ¶¶ 33-34 and 39-40; where customers are segmented by demographic or market information. The segmentation is done based on revenue levels or size of businesses.);

(b) analyzing demand behavior of each market segment for consumer price sensitivity (see ¶¶ 7, 8, 26, 33-34, 39-40, and 136-156; where an analysis of

historical transactions with market segments is done to determine the market behavior.);

(c) establishing a price associated with each analyzed market segment (see ¶¶ 33-34, 39-40, and 112-135; where historical pricing data is analyzed. The system then optimizes the price based on user selected constraints (such as maximum profit) and the system generates the optimal pricing for a product.);

(d) generating forecasts of demand for each analyzed market segment (see 136-140; where the effects of the price optimization is forecasted on each market segment.); and

(e) optimizing a pricing rate of a specific product based on said generated forecasts of demand (see ¶¶ 33-34, 39-40, and 112-135; where historical pricing data is analyzed. The system then optimizes the price based on user selected constraints (such as maximum profit) and the system generates the optimal pricing for a product.).

Boyd does not explicitly teach a method of determining a pricing rate for an insurance product. However, Boyd discloses a method of optimal pricing that can be applied to a variety of industries, regardless of the intended field of use of the method. Boyd teaches a method of promotional pricing, though the system has utility in other applications (see ¶7). The system being adapted to determining a pricing rate for an insurance product is irrelevant since the intended use does not change the overall functionality of the system. The intended use must result in a manipulative difference as compared to the prior art. The intended use must result in a manipulative difference

as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Therefore, it would have been obvious, at the time of the invention, to one of ordinary skill in the art to use the Boyd system for determining a pricing rate for an insurance product because the Boyd system is designed to be used in a price optimization regardless of the intended use.

As per claim 2, Boyd teaches:

The method of claim 1, further comprising performing steps (a)-(e) (see ¶¶18-247; where a user performs the steps of segmenting the market, analyzing the demand behavior of each market, establishing a price for the market, optimizing the price for the market, and forecasting the effects on the market of the change in price.).

Boyd fails to teach:

Periodically repeating steps (a)-(e).

It is old and well-known in the art to periodically re-examine and determine the pricing of a product for a market segment. The advantage of periodically repeating this process is that it allows an organization to maximize profits by offering a product at an optimal price consistently. It would have been obvious, at the time of the invention, for one of ordinary skill in the art to periodically repeat the process of price optimization in order to continuously offer the product at an optimal price in order to maximize profits.

As per claim 3, Boyd teaches:

The method according to claim 1, wherein the pricing variables include rating variables and other behavior variables (see ¶¶ 33-34 and 39-40; where the pricing

variables include rating variables such as revenue levels. The pricing variables also include other customer characteristics.).

As per claim 4, Boyd teaches:

The method according to claim 1, wherein analyzing demand behavior includes generating a unique forecast of demand for each of the plurality of market segments, the unique forecast of demand based on historical demand consisting of a mean and higher moments of a demand surrogate for each of the plurality of market segments (see ¶¶ 7, 8, 26, 33-34, 39-40, and 136-156; where the forecasting is done based on historical demand data for each market segment or customer.).

As per claim 5, Boyd teaches:

The method according to claim 4, further comprising testing the unique forecast of demand against actual observed demand (see ¶¶ 7, 8, 26, 33-34, 39-40, and 136-156; where actual demand is measured against forecasted demand. If a gross difference between forecasted and actual exists, an alert can be set up to notify the user of this difference.).

As per claim 6, Boyd teaches:

The method according to claim 5, further comprising determining a difference between the unique forecast of demand and the actual observed demand, and if the difference is of statistical significance, identifying the market segment associated with the unique forecast of demand as a critical segment (see ¶¶ 7, 8, 26, 33-34, 39-40, and 136-156; where the difference between forecasted demand and actual demand is observed. If the difference is of statistical significance, the user is

alerted. Forecasted and actual demand can be observed based on market segments as well.).

Boyd fails to teach:

Identifying the market segment associated with the unique forecast of demand as a critical segment.

It is old and well-known in the art to label an underperforming market as a critical market or segment. The advantage of labeling an underperforming market as a critical market is that it allows management to easily identify the underperforming markets in order for them to concentrate efforts to improve that market. It would have been obvious, at the time of the invention, for one of ordinary skill in the art to label a market segment that has a statistical difference between forecasted and actual demand as a critical segment in order to facilitate the identification of the market for management to concentrate efforts to improve the market.

As per claim 7, Boyd teaches:

The method according to claim 6, wherein establishing a price associated with each analyzed market segment includes assigning each analyzed market segment to a price tier (see ¶¶ 112-135; where the optimization accounts for different offers and different prices set to different market segments. Offering the same product for a different price to different customers is a price tier structure.).

As per claim 8, Boyd teaches:

The method according to claim 7, wherein assigning each market segment to a price tier includes assigning said critical market segment to a candidate price tier

(see ¶¶ 112-135; where the optimization accounts for different offers and different prices set to different market segments. Offering the same product for a different price to different customers is a price tier structure.).

Boyd fails to teach:

the candidate price tier associated with an increase in price compared to a previous price tier if the unique forecast of demand is larger than the actual observed demand and associated with a decrease in price compared to the previous price tier if the unique forecast of demand is smaller than the actual observed demand.

It is old and well-known in the art to increase the price of a product if the forecasted demand is larger than the actual demand and to decrease the price of a product if the actual demand is greater than the forecasted demand. The advantage of changing the price in this manner is that an organization can capture a greater market share and maximize profits based on actual and expected market trends. It would have been obvious, at the time of the invention, to one of ordinary skill in the art to adjust to increase the price of a product if the forecasted demand is greater than the actual observed demand and to decrease the price of a product if the actual demand is greater than the forecasted demand in order to maximize profits and capture a greater market share.

As per claim 9, Boyd teaches:

The method according to claim 1, wherein establishing a price associated with each analyzed market segment includes assigning each analyzed market segment



to a price tier (see ¶¶ 112-135; where the optimization accounts for different offers and different prices set to different market segments. Offering the same product for a different price to different customers is a price tier structure.).

As per claim 10, Boyd teaches:

The method according to claim 1, wherein the generated forecasts of demand are used to predict a number of conversions of a price tier assigned to each of the analyzed markets (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where a forecasted number of new customers reached with the pricing scheme is determined.).

As per claim 11, Boyd teaches:

The method according to claim 1, wherein optimizing a pricing rate includes:  
determining a percentage change in consumer demand that is expected to occur in response to a percentage change in a rate of a price tier containing said analyzed market segment (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where a forecasted number of new customers reached with the pricing scheme is determined.); and  
implementing a change in the rate of a price tier based upon said determined percentage change in consumer demand such that a profit from said pricing tier is maximized (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where a forecasted number of new customers reached with the pricing scheme is determined. The optimization of the pricing scheme produces the result that maximizes the profits based on change in price and the attraction or loss of customers.).

As per claim 12, Boyd teaches:

A method of dynamically determining a pricing rate for an insurance product, comprising:

grouping demand for any of a plurality of products together into any of a plurality of market segments based on a group of pricing variables, wherein the pricing variables include rating variables and other behavior variables (see ¶¶ 33-34 and 39-40; where customers are segmented by demographic or market information. The segmentation is done based on revenue levels or size of businesses. The segmentation can be done using total revenue (a rating variable) and other business characteristics.);

assigning each market segment to a price tier (see ¶¶ 112-135; where the optimization accounts for different offers and different prices set to different market segments. Offering the same product for a different price to different customers is a price tier structure.);

generating a unique forecast of demand for each market segment, including testing the unique forecast of demand against actual observed demand, and determining a difference between the unique forecast of demand and the actual observed demand, and if the difference is of statistical significance, wherein the unique forecast of demand is based on historical demand consisting of a mean and higher moments of a demand surrogate for each of the plurality of market segments (see 7, 8, 26, 33-34, 39-40, and 136-156; where the effects of the price optimization is forecasted on each market segment. Actual demand is measured against forecasted demand. If a gross difference between forecasted and actual

exists, an alert can be set up to notify the user of this difference. Analysis of historical data is used to forecast demand and analyze market segments.); and adjusting the price tier of the market segment according to the difference, if the difference is of statistical significance (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where a forecasted number of new customers reached with the pricing scheme is determined. The optimization of the pricing scheme produces the result that maximizes the profits based on change in price and the attraction or loss of customers.).

Boyd fails to teach:

identifying the market segment associated with the unique forecast of demand as a critical segment,

Claim 12 recites limitations already addressed by the rejection of claim 6; therefore the same rejection applies to this claim.

As per claim 13, Boyd teaches:

A method of determining an optimized price for offering an insurance product to a customer, comprising:

analyzing attributes of a customer's demand behavior (see ¶¶ 7, 8, 26, 33-34, 39-40, and 136-156; where an analysis of historical transactions with market segments is done to determine the market behavior.);

assigning the customer to one of a plurality of price tiers based upon the attributes of the customer's demand behavior (see ¶¶ 112-135; where the optimization accounts for different offers and different prices set to different

market segments. Offering the same product for a different price to different customers is a price tier structure.);

forecasting whether the customer will accept an offer to purchase the product based on the assigned price tier (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where a forecasted number of new customers reached with the pricing scheme is determined.); and

generating an optimized price based on the forecast (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where a forecasted number of new customers reached with the pricing scheme is determined. The optimization of the pricing scheme produces the result that maximizes the profits based on change in price and the attraction or loss of customers.).

As per claim 14, Boyd teaches:

The method of claim 13, further comprising:

compiling the attributes of a plurality of customers (see ¶¶ 7, 8, 26, 33-34, 39-40, and 136-156; where an analysis of historical transactions with market segments is done to determine the market behavior.); and

adjusting rates associated with the plurality of price tiers based on the compiled attributes (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where a forecasted number of new customers reached with the pricing scheme is determined. The optimization of the pricing scheme produces the result that maximizes the profits based on change in price and the attraction or loss of customers.).

As per claim 15, Boyd teaches:

The method of claim 13, wherein price tier assignments are generated based on a price tier assignment database (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where customer information and price tier information is stored in a relational database. A price tier assignment database contains the assignment of market segments to pricing tiers (see Specification page 17).

As per claim 16, Boyd teaches:

The method of claim 13, wherein the customer is assigned to a price tier based on the attributes and on a plurality of customer characteristics (see ¶¶ 33-34 and 39-40; where the pricing variables include rating variables such as revenue levels. The pricing variables also include other customer characteristics.).

As per claim 17, Boyd teaches:

The method of claim 13, wherein generating of an optimized price is based on forecasted acceptance rates and assigning a price tier that implements the optimized price (see ¶¶ 7, 8, 26, 33-34, 39-40, and 112-156; where a forecasted number of new customers reached with the pricing scheme is determined. The optimization of the pricing scheme produces the result that maximizes the profits based on change in price and the attraction or loss of customers.).

As per claim 18, Boyd teaches:

A method of dynamically setting pricing rates for an insurance product comprising:

compiling data associated with historical demand behavior of a plurality of customers for the product (see ¶¶ 7, 8, 26, 33-34, 39-40, and 136-156; where an analysis of historical transactions with market segments is done to determine the market behavior.);

developing a plurality of market segments based on the data associated with historical demand behavior, wherein each market segment has common attributes (see ¶¶ 33-34 and 39-40; where customers are segmented by demographic or market information. The segmentation is done based on revenue levels or size of businesses.);

analyzing attributes of a particular customer and assigning the customer to a market segment having common attributes (see ¶¶ 7, 8, 26, 33-34, 39-40, and 136-156; where an analysis of customer attributes and historical data is used to group customers to a market segment.);

evaluating customer characteristics of the particular customer (see ¶¶ 33-34 and 39-40; where the customer is segmented in to a market segment based on pricing variables. Pricing variables include rating variables such as revenue levels. The pricing variables also include other customer characteristics.);

assigning the customer to a pricing tier based on the assigned market segment and the customer characteristics (see ¶¶ 112-135; where the optimization accounts for different offers and different prices set to different market segments. Offering the same product for a different price to different customers is a price tier structure.); and

providing a pricing rate for the particular customer based on the pricing tier (see ¶¶ 112-135; where the optimization accounts for different offers and different prices set to different market segments. Offering the same product for a different price to different customers is a price tier structure.).

As per claim 19, Boyd teaches:

The method of claim 18, further comprising:

including data associated with the particular customer in the data associated with the historical behavior of a plurality of customers for the product to provide new compiled data; and adjusting the market segments based on the new compiled data (see ¶¶ 33-34, 39-40, and 136-156; where customers are segmented by demographic or market information. The segmentation is done based on revenue levels or size of businesses. Historical data is used to analyze customer behavior and also impacts the development of market segments. As more and more current data is available, adjustments will be made to the market segments.).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following are pertinent to the current invention, though not relied upon:

Fields et al. (U.S. Patent No. 5459656) teaches a system and method where the system measures and stores the business demand data for a plurality of time intervals

and a plurality of products or tasks, and projects the business demand for a plurality of products or tasks for near-future time intervals using percentage based demand curves.

Flagg (U.S. Patent No. 6456979) teaches a method of evaluating a permanent life insurance policy including the steps of establishing a benchmark cost of insurance value, obtaining a policy illustration, resolving an illustrated cost of insurance value from the policy illustration, and comparing the benchmark cost of insurance value with the illustrated cost of insurance value.

Ouimet et al. (U.S. Patent No. 6078893) teaches a method for tuning a demand model in manner that is stable with respect to fluctuations in the sales history used for the tuning is provided.

Hartman et al. (U.S. Patent No. 5987425) teaches a variable margin pricing system and method that generates retail prices based on customer price sensitivity.

Levanoni et al. (U.S. Patent No. 6976001) teaches a demand forecasting model determined by size, location, and item.

Montgomery et al. (Montgomery, Alan L.; Rossi, Peter E.; "Estimating Price Elasticities with Theory-Based Priors", *Journal of Marketing Research*, November 199, pp. 413-423) teaches price determinations based on price elasticities determined by consumer behavior.

Young (Young, Virginia R.; "Insurance Rate Changing: A Fuzzy Logic Approach", *Journal of Risk and Insurance*, September 1996, pp. 461-484) teaches the modification of insurance rates based on fuzzy logic algorithms.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalyan K. Deshpande whose telephone number is (571) 272-5880. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*KKD*

kkd

*Susanna M. Diaz*

**SUSANNA M. DIAZ  
PRIMARY EXAMINER**

*AU 3623*